

List of Current Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1 - 17 (Cancelled).

18. (Currently Amended) A potentiometric sensor connectable to a superordinated unit, comprising:

an elementary sensor for registering a potentiometric parameter, representative of pH and temperature values;

an interface for issuing a potentiometric-parameter-dependent signal to the superordinated unit; [[and]]

a digital data memory, permanently connected with said elementary sensor~~[[.]]~~,

an analog-digital-converter for converting an analog signal issued from said elementary sensor into a digital signal; and

a microprocessor for control of said digital data memory and/or control of said interface for communication with said superordinated unit, wherein:

the potentiometric sensor is a pH sensor, and said elementary sensor comprises a pH-electrode and a temperature sensor therein;

said digital memory stores one or more of the following items or information: the calibration data of said elementary sensor; the sensitivity of said elementary sensor determined at a first temperature, especially 25°C; the asymmetry potential determined at 25°C; the temperature offset; logistical information; the serial number of said elementary sensor; the temperature range of application; the pH range of application; the extreme values of the operating temperature; the extreme values of the operating pH; the identification of a technician; the service life; the isothermal point of intersection; and

said data memory further stores historical data over a moving time-interval

of sensor operation, and/or event-dependent historical data.

Claims 19 - 23 (Cancelled).

24. (Previously presented) The potentiometric sensor as claimed in claim 18, wherein:

said digital data memory is connected such that it can be controlled via said interface from the superordinated unit.

25. (Previously presented) The potentiometric sensor as claimed in claim 18, wherein:

the superordinated unit has a housing, and

the potentiometric sensor is detachably connected with the housing of the superordinated unit via a mechanical coupling, which includes said interface.

26. (Previously presented) The potentiometric sensor as claimed in claim 18, wherein:

the superordinated unit has a cable, and

the potentiometric sensor is detachably connected with the cable which communicates with the superordinated unit by means of a coupling which includes said interface.

27. (Previously presented) The potentiometric sensor as claimed in claim 18, wherein:

said interface, in addition to data communication, also ensures the power supply of the potentiometric sensor.

Claim 28 (Cancelled)

29. (Currently amended) The potentiometric sensor as claimed in claim

18, wherein:

said interface is an inductive inductively coupled interface.

30. (Currently amended) The potentiometric sensor as claimed in claim 18, wherein:

said interface is ~~a galvanic~~ an interface having galvanic contacts.

Claims 31 - 34 (Cancelled)